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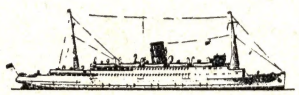

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Model Ships and Power Boats

INCORPORATING *Ships and Ship Models*

EDITED BY EDWARD BOWNESS

VOL III NO 34 OCTOBER 1950

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The Ship's Log

THE ASSOCIATION OF SHIP MODEL SOCIETIES

During the recent "M.E." Exhibition the above association held a meeting on the premises, a report of which we publish herewith:—

On August 19th the Association of Ship Model Societies held its second six-monthly committee meeting. It was an open meeting at which thirteen societies were represented, and questions were invited (and received) at all stages of the proceedings. A report was given on the formation and development of the association, with explanatory details of various aspects of its policy and projects. It was announced that the temporary ban on increased membership is now lifted as the machinery for future expansion has been perfected, and applications for membership by interested societies can now be received. Current activities, which include a library and information service, journal, exhibitions and lecture programme, were thoroughly discussed and it is apparent that great headway has already been made.

We are particularly interested in this association as by its means much can be done towards the development of the various ship model societies with a consequent improvement in the general standard of ship modelling. Ship model societies, particularly in the Metropolitan area, sometimes have difficulty in building up a membership big enough to enable them to function economically. Unlike the model engineering societies they do not aim to provide a workshop, as machine tools and similar special facilities are not often necessary in ship modelling, and thus they depend for their recruiting activities on lectures and exhibitions. This is where the association can be particularly useful. By its means a panel of lecturers can be built up and joint meetings arranged for, thus providing an audience which would justify the engagement of lecturers of the first order. Joint exhibitions also can be arranged as very few societies can stage an exhibition from its own resources. The library and information services envisaged in the report can be very valuable, and could only be provided by an association such as this.

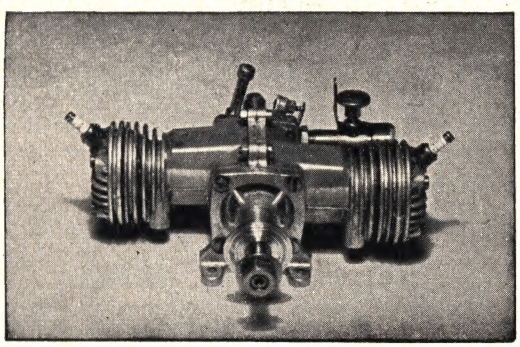
OUR COVER PICTURE

This month we are using a photograph taken in the demonstration area at the recent "M.E." Exhibition. The model under construction is of a wooden brig and is being built in proper shipwright's fashion. To build such a model calls for considerable knowledge of the fabrication of the wooden ship as well as much research work. It also demands a high degree of craftsmanship in woodworking and great patience and perseverance on the part of the builder. If the hull is to be rigged the project is still further involved as a knowledge of how the spars were built and rigged entails close study and the actual rigging of the model calls for skill in small scale work of a very high order. This is not intended to discourage the ship modeller from attempting such a model but rather to stress its value when completed and the skill and knowledge required for its production.

*MODEL MARINE POWER PLANTS

by Edgar T. Westbury

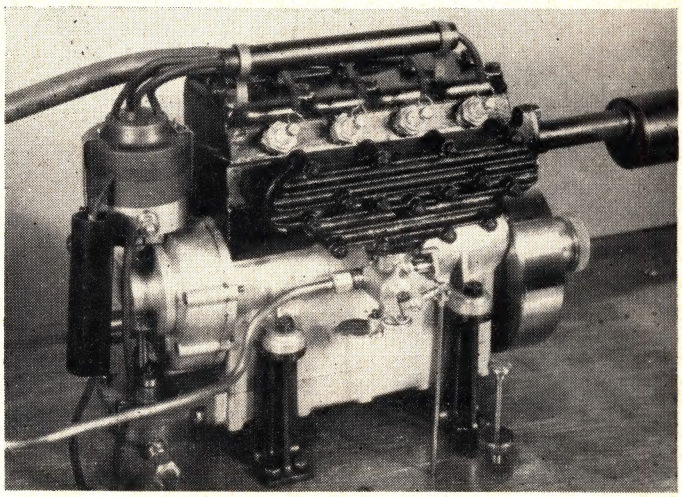
THE suitability of the " 1831 " 30-c.c. twin engine for marine work, as commented upon in last month's issue, applies not only to prototype craft, but it has attracted the attention of at least one very competent exponent of racing hydroplanes, who has embarked on the construction of one of these engines for the latter purpose. However, until the results of this experiment are available, no definite claims as to its performance in this field can be made; it was certainly not designed for racing, but this applies also to several other of my engine designs, which have been successfully applied thereto.



(Above) The Craftsman Twin 10 c.c. two-stroke engine

While the vertical cylinder arrangement is by far the more common in all full-size applications, and marine work in particular, there is something to be said for horizontal engines, which are by no means unknown in modern marine propulsion. One outstanding advantage of the horizontal engine is its low centre of gravity, which need not necessarily be higher than the shaft line, and this is an important factor in the stability of shallow-draught boats. When only two cylinders are employed, the most satisfactory balancing can be obtained by arranging the cylinders horizontally opposite each other, and using a two-throw crank so that the reciprocating parts move in opposite phase to each other. The well-known " flat twin," while most common in motor-cycle practice is by no means confined exclusively thereto, and a typical example of this principle in light marine practice is the Coventry Victor range of engines, which include both petrol and diesel types. These are four-stroke engines, but two-strokes working on identical mechanical principles have been very popular for many years as outboard engines.

The only representative, in this country at least, of a " flat twin " engine of a suitable size for model marine work is the 10-c.c. " Craftsman Twin," two-stroke, produced either as a finished unit, or in sets of die castings and parts, by Craftsmanship Models Ltd., Ipswich. It was designed primarily for use in model aircraft, but has been used very successfully in boats, and is most appropriate to light, fast boats of the hard chine type, such as motor torpedo boats or air-sea rescue launches.



(Right) An example of the " Seal " 15 c.c. four-cylinder engine, constructed by Messrs. F. Bontor and R. C. Marshall

While the mechanical system of the flat twin is simpler than that of any other multi-cylinder engine, the two-stroke of this species has the minor disadvantage of requiring a special form of ignition equipment to enable the two cylinders to fire simultaneously. This may be done by using two synchronised coils controlled by a single contact-breaker but a double-pole coil, no larger than the orthodox single coil, is available, and magneto ignition has also been applied successfully. The standard air-cooled cylinders can be converted to

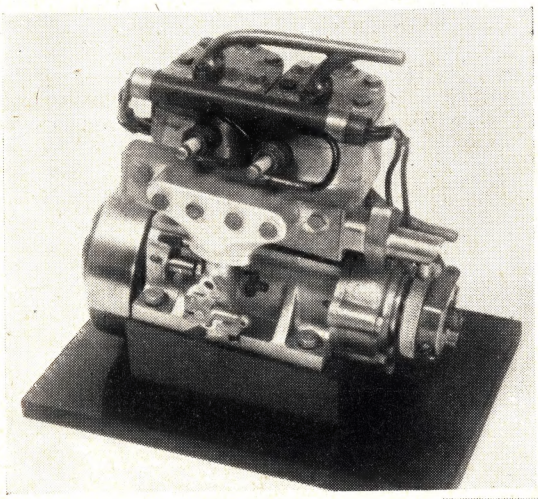
*Continued from September issue, page 138.

water cooling in the same way as for single-cylinder engines. In one interesting marine installation where this engine is used, the exhaust pipes, which emerge on the undersides of the cylinders, are taken directly through the bottom of the boat, and discharged underwater by deflectors facing left, thereby cooling and silencing the exhaust gases very effectively.

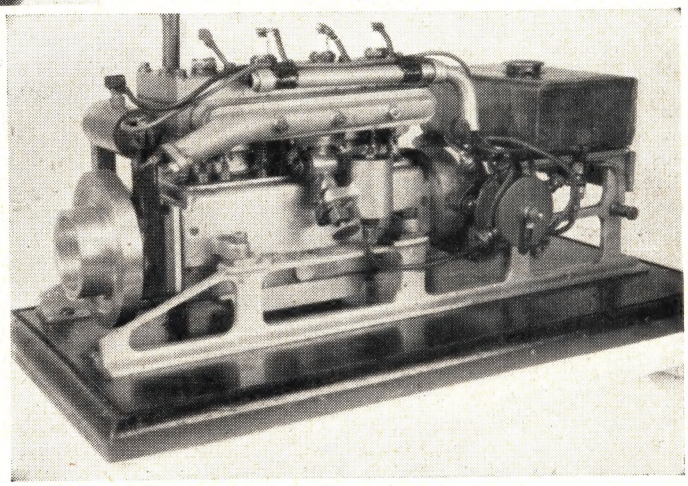
Four-cylinder engines have been used in a number of model power boats in the past, but most of them have been too large for use in models of reasonably handy size, and this has very much restricted their popularity. The first four-cylinder of a size suited to boats which can be easily handled was the 15-c.c. " Seal " engine, which was described in *The Model Engineer* about three years ago, and has been applied successfully to several kinds of models, including boats. This type of engine is not intended to produce the highest possible performance, though its power is adequate for most prototype boats from 3 to 5 ft. in length; its most impressive characteristics, however, are its smooth, quiet running, and very wide range of speed control. An enlarged edition of the design, of 30-c.c. capacity, has also been produced, and retains the essential features of the smaller engine, while being somewhat easier to construct.

The very large number of working parts in any type of four-cylinder engine, however, must necessarily be a deterrent to many constructors who would like to fit such an engine in a boat. Many model power boat enthusiasts have told me that, much as they admire the " Seal " engine, they doubt their ability to construct one successfully; while others have started the construction of such an engine lightheartedly but have failed to complete it satisfactorily. For the benefit of these constructors, I have produced a simpler design for an engine of true marine type, having very similar working characteristics to the " Seal," but with only two cylinders, and of 10-c.c. capacity.

Apart from the mere matter of size, this engine, which is known as the " Seagull," differs from the " 1831 " engine in several important respects. Instead of being fitted with overhead valves, it has side valves, like the " Seal," but is different from either of the former engines in having separate cylinders instead of " monobloc " cylinder and crankcase arrangement. This simplifies machining processes on the individual components to some extent, but the main object is to produce an engine similar in appearance to the small twin-cylinder engines which have been popular for many years in river and harbour craft.



(Above) The " Seagull " 10 c.c. vertical twin marine engine, the construction of which is now being described in the " M.E."



(Right) A 50-c.c. four-cylinder engine, constructed by Mr. W. Savage

Among the prominent features of these engines which have been faithfully reproduced are the copper water service pipes and the red fibre conduit for the ignition leads. The built-up inlet-exhaust manifold on the original engine seen in the photograph has now been superseded by one made from two castings, on the same principle as the manifold of the " Seal," but simpler in construction; the same carburettor as fitted to the latter is used, and gives a similar

(Continued on page 155)

FLAGS AT THE "M.E." EXHIBITION

By Alec A. Purves

THE general impression of the flags on this year's exhibits was a rather mixed one—a few good examples, quite a number of carelessly made flags, but fortunately not many incorrect ones, at least as far as the serious models were concerned.

One or two models showed really good flags, noticeably those on Mr. Marsh's cup winner, *Thermopylae* (F.5), and on Mr. and Mrs. McNarry's respective entries, *Caronia* (I.27) and *Great Western* (I.28). Mr. Marsh had the best Red Ensign for many years, roped and toggled, and correctly secured to the halyard (so he tells me) by a sheet bend; his name pendant was also good, but I feel that his house flag should have been larger. A ship of this size would almost certainly have had a house flag of at least 6 ft. × 4 ft., to be in good proportion with the ensign and pendant. Incidentally, I noticed that the foremast (at which no flag was flying) was correctly fitted with signal halyards, a feature omitted by nearly every other sailing ship in the exhibition.

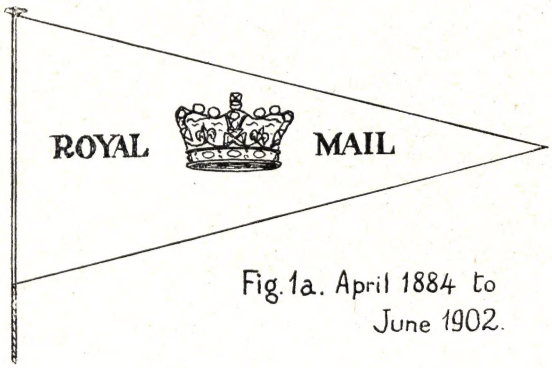


Fig. 1a. April 1884 to June 1902.

Fig. 1b. Since June 1902.

ROYAL MAIL PENDANTS
(White, with red crown, lettering, &c.)

Mr. McNarry showed the Red Ensign at the stern, the two house flags at the starboard yardarm, and the Royal Mail Pendant at the port yardarm, all very well made although the pendant was not broad enough in proportion to its length. There are two designs of this pendant (Figs. 1a and 1b); the earlier, instituted in April, 1884, has only a crown between the words, while the present one, dating from June, 1902, has a more modern crown with a posthorn below it. Mrs. McNarry correctly showed the typical array of flags flown by a 19th century ship on her maiden voyage—Stars and Stripes (with the then correct number of 25 stars) at the fore, indicating destination; Red Ensign at the main, for a great occasion, in the early 19th century proportions, squarer than now; name pendant at the mizzen, and another Red Ensign aft, all very neatly executed.

Another good example was the White Ensign at the ensign staff of Mr. Pariser's *Victory* (F.23), but he had fitted no ensign halyards at the peak of the gaff for use when the sail was set and the ensign staff unshipped (as it would foul the sail), neither had he fitted any signal halyards to any of the masts. Surely, of all ships which should be shown as capable of hoisting a signal, the *Victory* should head the list. The minute reproduction of the royal arms in the figurehead appeared to be correct for the date at which the ship was built (but she had a much more elaborate figurehead then), but was wrong for the Trafalgar period owing to the alteration in the arms in 1801.

In looking for the most interesting flags, the first exhibit to catch my eye was Rear-Admiral Blackman's *Prince* of 1670 (F.4.), although he had chosen rather coarse material, making it difficult to obtain sharp detail, and I feel the jack, standard, and ensign were all too long, being in the modern proportions of 2 : 1 instead of the squarer form of the 17th century when approximately 5 : 4 or 4 : 3 were usual. The chief interest lay in the flags at the main and fore masts. How many modellers correctly interpreted the meaning of the Stuart Royal Standard at the main, and the plain red flag at the fore? The former, contrary to normal expectations, does not indicate the presence of the king on board, as when Charles II visited the *Prince* the red Admiralty flag with the yellow anchor was hoisted at the fore, and the Union Flag at the mizzen, as in present-day practice. No, in this instance the Standard was worn by H.R.H. the Duke of York (later James II) as Lord High Admiral, and the red flag at the fore (together with the Jack at the bows, red vane at the mizzen, and Red Ensign at the stern) completes the flags which were to be seen flying on this ship at the beginning of the Battle of Solebay, May 28th, 1672, when the Duke of York ordered the signal to be made "Engage the enemy"—a red flag at the foremast head; a few hours later the *Prince* was dismasted and the Duke had to shift his flag to another ship.

The other flags on the model call for no comment,

except that in those days the canton of the ensign was smaller than today (Fig. 2) and did not occupy the present full quarter of the field.

Another interesting item was the first appearance of the Indian national flag (as destination or complimentary flag) at the fore starboard yardarm of Mr. R. V. Shelton's *Baron Elphinstone* (D.1) ; although normally flown at the masthead, in some cases this might foul the aerial, and then the yardarm is used. The plain tricolour, horizontal stripes of orange (saffron), white and green, with a dark blue wheel (*chakra*) in the centre, would have been in use at

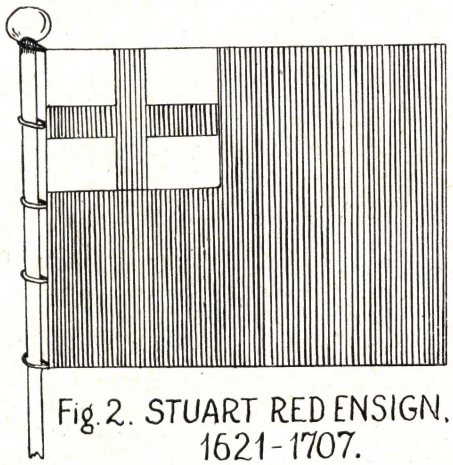


Fig. 2. STUART RED ENSIGN. 1621-1707.

sea for only a short period, as on January 26th, 1950, the Indian Republic adopted two new flags, a Merchant Ensign and a Naval Ensign, consequently the National Flag would not now be seen at sea (assuming that flag-makers can now supply the new ones). The new ensigns follow British practice, except that they are proportioned 3 : 2 instead of 2 : 1, and the red cross in the Naval Ensign is one-sixth of the breadth of the flag, slightly wider than ours which is two-fifteenths (Figs. 3a and 3b). Doubtless the red cross has been included to prevent the ensign being confused with that of South Africa, plain white with their national flag in the first quarter.

Elizabethan flags were again in evidence, but in spite of previous articles several models showed the English lions in the first and fourth quarters of the Royal Standard, instead of the French fleurs-de-lis, while the latter are *still* being shown as white instead of yellow. Even if all the kit manufacturers and producers of plans show white fleur-de-lis (to say nothing of the coloured plates and covers of a few nautical publications), they are definitely wrong. The fleurs-de-lis in the Royal Arms (of which the Standard or Banner is merely the flag version) were always gold, shown in flags as yellow, from their introduction about 1340 until their removal some four and a half centuries later, in 1801.

An interesting, but rather doubtful, combination of Elizabethan ensigns was shown by Mr. N. W. Hare, on his *Elizabeth Regina* (F.3). At the stern was the familiar blue-and-white striped ensign with St. George's Cross superimposed, but with six stripes instead of the usual eight for this flag. At the main was another well-known ensign, seven stripes, four green and three white, with St. George's Cross in the canton. There is only one instance on record of this flag (and other stern ensigns) being worn at the masthead, when it was used as a squadronal admiral's flag in the Expedition to Cadiz, 1596 (see *The Naval Miscellany*, Vol. 1, Navy Records Society, 1901), but no ship of this name was in the fleet as a flagship.

Another pleasing flag from this period was that of the Levant Company, a St. George's Cross edged white, superimposed on the Tudor Royal Standard, shown on Mr. P. M. Wood's sailing model (G.5). Yet another which I have not previously noticed at these exhibitions, was the Lubeck flag of white over red, shown at the mastheads of Mr. R. G. Hutson's *Adler von Lubeck* (F.13), but I cannot trace the multi-striped stern ensign, seven white and seven red stripes, although I feel sure I have seen it in an old painting somewhere. My earliest flag book (Carel Allard, 1695) shows the halved flag, and 17th century ships in Lubeck Museum all show the halved flag both at stern and mastheads. If Mr. Hutson has good evidence for the striped ensign, I should be glad to hear, as there is still much uncertainty about these old flags. Incidentally, I rather doubt the use of halyards at this early date when flags were almost invariably attached to the flag-staves by loops or rings.

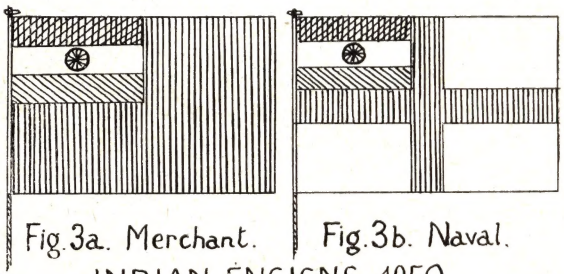
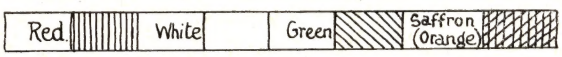


Fig. 3a. Merchant. Fig. 3b. Naval.
INDIAN ENSIGNS, 1950.



The U.S.A. brig, *Pilgrim*, by Mr. C. J. Clarke (F.24) showed a pleasing ensign, with the correct number of stars for 1834—twenty-four, in four rows of six.

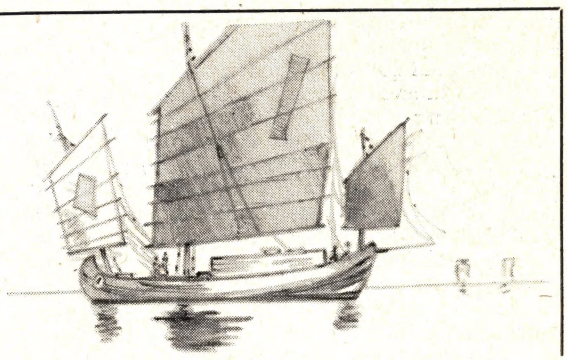
Signal flags were mainly restricted to an occasional " H " flag, and a few hoists indicating ships' names. I was puzzled by Mr. Murray's *Loch Sunart* (F.29) which showed a four-flag hoist under a rough Red Ensign ; the three lower flags were CKB of the 1857 Code, while the upper one, blue with a yellow upright cross, is not in the series. I looked up RCKB (R is *red* with a yellow cross), and found they were the letters of *Loch Etive*, and wonder if Mr. Murray has deliberately put in a " phoney " flag here.

(*Continued on page* 148)

NOTES ON CHINESE JUNKS

By

G. WORCESTER



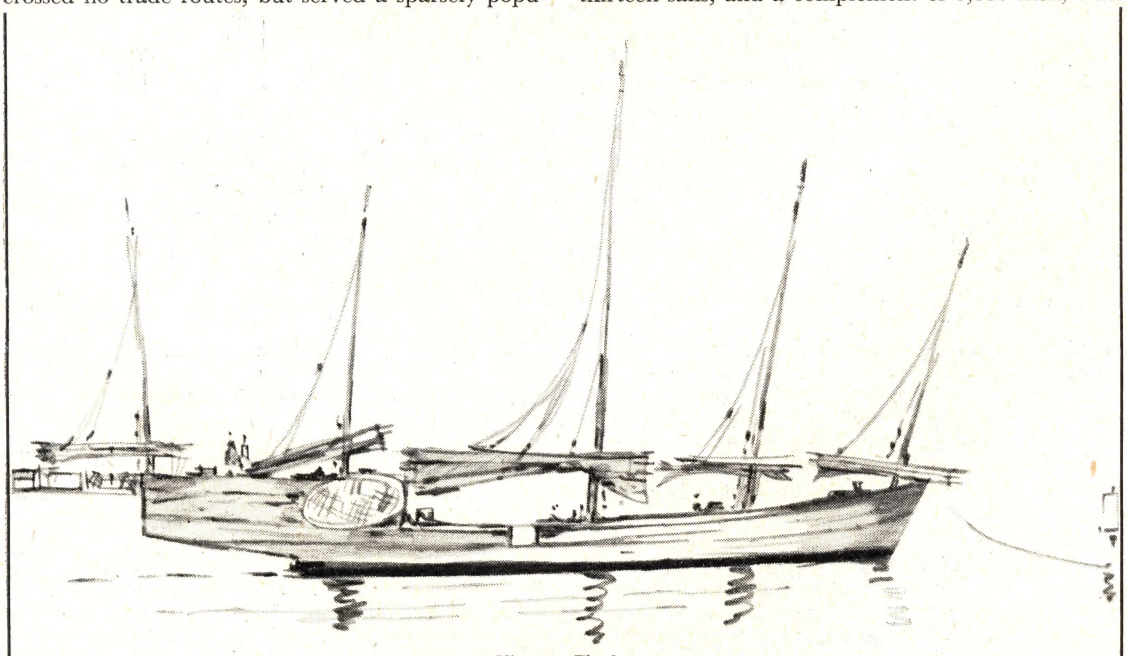
IN a country so vast as China with a coast-line embracing over 20 deg. of latitude, and two of the largest rivers in the world together with an unusually extensive canal system, it is not surprising that she possesses a large number and variety of vessels of all sorts and descriptions, together with a numerous floating population.

To the stranger it might seem that all junks are alike. This is not the case for almost every waterside town and many a village has developed its own ideas of construction and ornamentation.

The sea-going junks of Northern China are considered by many authorities to be the oldest known existing types of vessels, dating back probably thousands of years ; the grounds for this assumpton being that they were never subjected to any modifying outside influence for, unlike the junks of the Southern China Seas, their inter-colony coastal operations crossed no trade routes, but served a sparsely populated area devoid of commercial opportunities to shipping.

The contention that the sea-going junks are the oldest basically unchanged types is open to serious question for, if the wanderers reached and settled by the rivers first, it is only logical to assume that the flat-bottomed riverine craft were the earliest of all types, being descended directly from the raft. Moreover, the argument that isolation from outside influences tended to preserve the unchanging continuity of design applies even more strongly to the internal riverine craft which were, and still are, based on designs of fundamental simplicity.

The junks of today are, as a rule, small, but from the descriptions given by Marco Polo, Ibn Batuta, and in more recent days Magaillans, the early craft were comparatively large vessels. Some of them, we are told, had four decks, and carried as many as thirteen sails, and a complement of 1,000 men, with



Kiangsu Trader

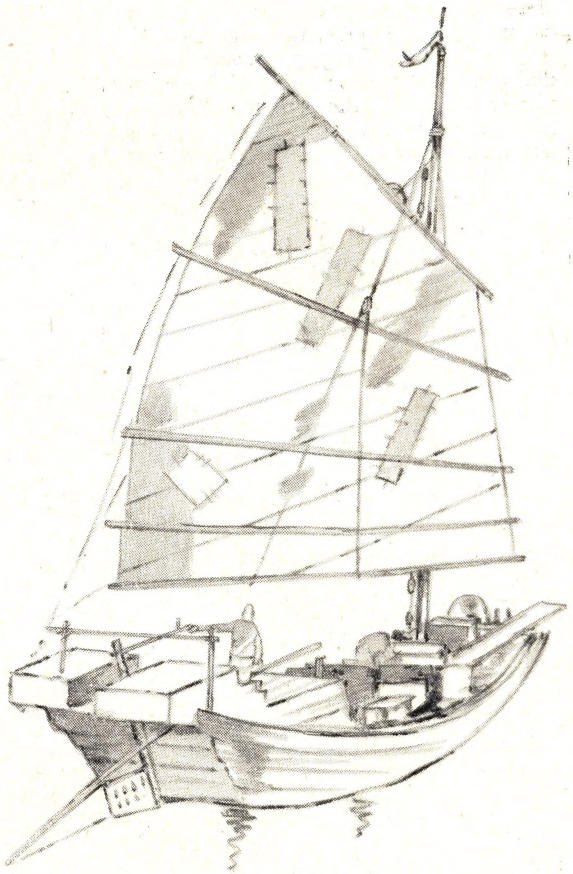
passengers in addition. The Chinese were doubtless the pioneers in the building of large luxury liners. The ships of Europe of this era were vastly inferior in all respects ; indeed, China probably led the world in ocean shipping until about the 15th century. The Kiangsu* and Antung Traders are probably the descendents of these ancient liners. The former may easily be recognised by their five masts, diverging like the sticks of a half-opened fan, and the 10 ft. long stern gallery. The older types, very seldom seen nowadays, have very exaggerated sterns.

Off the Yangtze innumerable types are to be found. The river craft and the fishing boats from the Chusan Archipelago are to be seen in the estuary in large numbers. The two types may be easily distinguished. The river craft have square bows and the hulls are treated with wood oil while the fisher craft have sharp bows and are painted black and red. The cut of the sail is quite different. Generally speaking the river craft favour a tall square-headed lug-sail in order to catch the wind over the high banks. The fishing boats, however, have their sails well peaked, or use sprit-sails.

The Tsungming Traders are also to be found working this area. They belong to the highly respectable Kiangsu Trader family ; but sad to relate they are very careless about keeping up their dignity, for their only form of cargo on the return journey Shanghai is night-soil in buckets. The famous Tsungming Pig Boat, originally hailed from the north, being a fishing junk, but a more fruitful field for her activities has been found in the noisome pig trade between delta ports and Shanghai.

* Sometimes known as the Pechili Trader.

Chusan ice boat



Hong Kong cargo boat

In China nearly everybody fishes and everyone eats fish, but Ningpo is exceptionally busy in both respects and is one of the most important fishing centres in Chekiang. Some years ago ten thousand fishing boats and at least eighty thousand fishermen were employed in the industry. The modes of fishing and the gear used are apparently little changed from those of the remote past and the simplicity of the former and the ingenious construction of the latter are quite remarkable. The fishing craft, generally speaking, have sharp bows. The boats are usually at sea for three months. Food and water are taken out to them and the catch is brought in in especially designed craft known as " ice boats."

Wenchow is a trading port, and the bluff bow comes into being again. The Wenchow sailors are most artistic and they like bright colours—greens especially.

Foochow, farther down the coast, is also a trading port. Here colour and decoration reach their highest point. The port motif is yellow.

Although Amoy and Swatow are chiefly trading ports, there is a large fishing industry, and the junks hailing from these ports have a hybrid bow, a compromise between the sharp and the square bow.

Here the mat sail makes its first appearance, and colour, as decoration, begins to go out.

Finally Hong Kong is reached. Here a totally different type is to be seen. Colour has gone completely, as has also the oculus, and the cut of the sail has changed considerably. Here the use of the fenestrated rudder is almost universal. To the student of nautical research the Hong Kong craft are dull for foreign influence is very strong.

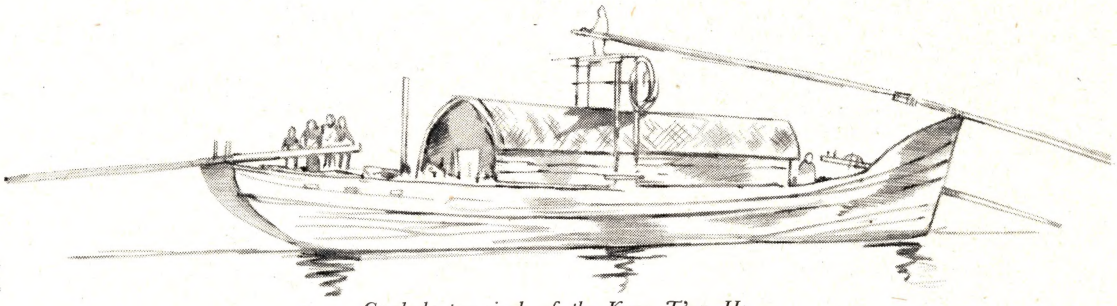
The craft of the Yangtze may lack the spice of colour and romance to be found in the sea-going junks, but there are many types, both large and small, on the great river to arouse interest and admiration. Dragon boats and snail boats, mud-touching boats and kettle boats, each has an individual attractiveness and each is designed for a specific purpose.

The Wuhu rice boats are well known. On the Grand Canal, too, there is a most interesting type known as the " two section " boat for it can divide itself into two in the middle so as to allow separate handling of the bow and stern halves. The design is attributed to Kublai Khan who required to be able to carry his boats overland.

On the Han River a crooked stern junk is to be found operating in an area where junks of normal design are to be found. Their crews are intensely conservative people, loath to change, and strenuously cling to old and traditional design and practice.

Above Ichang rapids and races come into being and the character and design of the junks change to meet the hazardous conditions which obtain. The rapids are seasonal, that is to say they disappear and form according to the season of the year and the height of the river, and it is interesting to notice how the design of the junks changes to meet special requirements. Work among such perilous conditions has evolved a hardy race of junkmen whose skill and resourcefulness are second to none in the world.

Probably one of the most interesting types used for work in rapids is known as the Wai p'i ku Ch'uan. The eccentricity of its peculiar design has excited considerable speculation concerning its origin. According to the junkmen Lu P'an, the Carpenter god, is given the credit for its design. Its home port is on the Kung T'an Ho, a tributary of the Yangtze, 60 miles below Chungking.



Crooked stern junk of the Kung T'an Ho

The outstanding feature of this vessel is that its stern is devoid of bilateral symmetry. It has no rudder and is steered by two powerful sweeps. The deck is curved to such an extent that the port counter is situated in the median line of the vessel, the corresponding starboard counter is considerably lower, thus letting the sweeps function independently.*

Another interesting type is to be found on the dangerous rapids of the Yantsingho in Szechwan. According to tradition this junk is of very great antiquity and has functioned in its present form for about 1,700 years. This is the crooked-bow junk, called by the Chinese " Lu Ch'uan," or " oar boat " operating as a salt carrier on the river which flows through a great industrial centre where innumerable brine wells extend over a large area.

Considering the great interest which attaches to the Chinese junk and the great range of types which are available, it is surprising that model makers have devoted so little attention to this fascinating branch of nautical research.

* Model makers may be interested to know that the writer supervised the building of a scale model of this junk for the Science Museum. It will be added to the famous " Maze Collection " and will be on view to the public in the near future.

FLAGS AT THE "M.E." EXHIBITION

(*Continued from page* 145)

Two exhibitors only would be liable for a fine of £500 this year, if their models were real ships, and both, strange to relate, are medal winners. Mr. Gardner's trawler (E.2) had a paper Union Flag at the main, which, apart from contravening flag regulations, rather spoilt the effect of good craftsmanship. Dr. Fletcher's *Iolaire* (E.4) transgressed by wearing a White Ensign. If the owner of this imaginary vessel were a member of the Royal Yacht Squadron, he would, of course, wear the White Ensign together with the R.Y.S. Burgee at the masthead, but with no burgee and an imaginary ship, this offence cannot go unnoticed.

One small error caught my eye at the last moment. Mr. R. B. Clarke's *Herzogin Cecilie* (F.37) showed the ship's signal hoist and correct house flag, but the Finnish flag at the peak was the National Flag with the red shield and white lion in the centre of the blue cross, instead of the Merchant Ensign which is the plain cross omitting the arms.

*THERMOPYLAE

A Sailing Model Clipper Ship — *by Graham Henley*

THE foreyard, mainyard and crossjack were slung on trusses, see Fig. 11, the upper and lower topsail yards on cranes, see Fig. 12, and the topgallants and royals held with brass wire parrels.

Each tier of yards was slung to swing on the same axis to avoid ugly creases in the sails, as far as possible, when the yards are hauled against the backstays. This is the sail trim that suits the clipper best in my opinion, close hauled to windward. As in the prototype, all points where friction occurs have to be kept greased, as verdigris forms quickly at sea, especially on brasswork, causing moving parts to bind, usually at awkward moments when leaning over the side of the heaving dinghy, trying to put the ship on the other tack and fend her off from damage at the same time.

Each yard was fitted with removable jackstays, see Fig. 13, a length of stiff brass wire with four short legs soldered to it in the case of the upper yards, with a central addition for the bigger lower yards. These legs, spaced evenly, with one at each yardarm, were made to slip into $\frac{1}{16}$ in. brass cotter pins passed through holes bored in the yards. The taking in of sail on *Thermopylae* is a simple matter of lifting out the jackstay with its sail, leaving the yard in position, a neat and ingenious idea flagrantly copied from the fleet of model clippers, *Caliph*, *Cutty Sark* and *Challenge* mentioned as the progenitors of my ship.

*Continued from September issue, page 131.

The furling of a dozen and a half square sails would be a tedious and lengthy job, and the result, however, neat, would still leave too much bulk aloft for a breeze that necessitates reducing the canvas. In practice, sailing from the foreshore as I do, the only sails which need taking in are the stunsails, flying jib and main topgallant staysail. If more than this is required the sea is too rough to launch the dinghy, and the situation is resolved simply into no sailing.

The mention of brass cotter pins introduces this useful item, for which many uses can be found on a working model ship. Smaller and less obtrusive than the smallest obtainable screweyes of sufficient strength, they form neat loops to hook the skein of jibs to, on the jibboom. On the after side of the mizzen mast a brass jackstay was held in place by a cotter pin, top and bottom, and on this jackstay further cotter pins acted as goosenecks for the spanker boom and gaff. See Fig. 11. At the peak end of the gaff a hole was bored to receive a fine cotter which took the small block for *Thermopylae's* ensign halliards. So many and varied were the uses to which these cotter pins were put, that a gross was quickly expended. A larger size, $1\frac{1}{4}$ in. by 3/32 in., were also put to good use, notably as the straps to which the fore, main and mizzen shrouds and backstays were hooked. Each pin had one leg cut off about $\frac{1}{8}$ in. from the loop and the other leg was bored through

Mr. Justice Oliver's models "Caliph" and "Cutty Sark" at sea

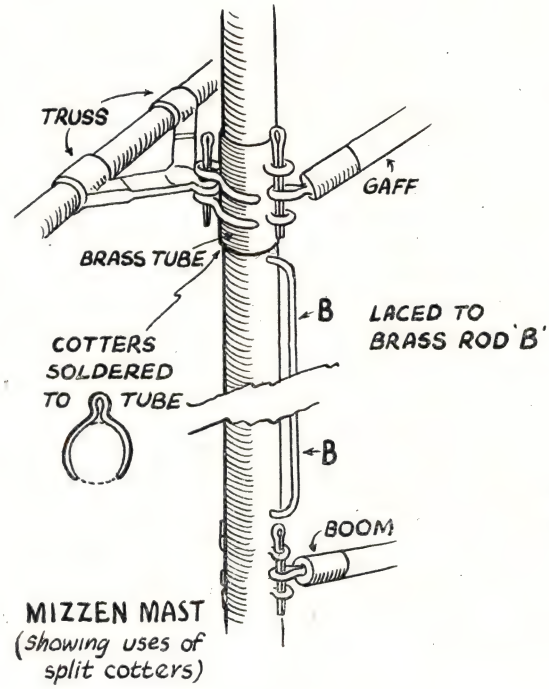


Fig. 11

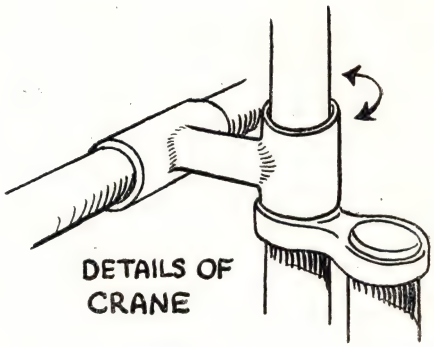


Fig. 12

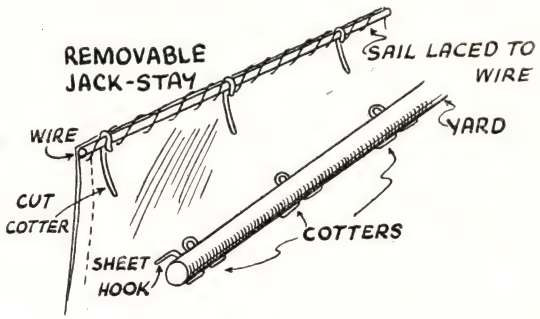


Fig. 13

near its end with a 1/32 in. drill. Each was then passed through a hole bored downwards and outwards through the capping rail and copper pinned to the hull just above the moulding running at deck level the length of the ship. Cotter pins, the fine sort, formed the futtock shrouds, again with one leg cut off, leaving enough of the leg cut off to pass through a hole in the edge of the tops, taking the upwards strain of the topmast shrounds. See Fig. 8. The futtock shrouds were secured to a screweye let into the lower masts, port and starboard, adjacent to the housing of the lower yard trusses.

The ship's standing rigging was cut from hemp fishing line, each shroud looping through a small galvanised wire hook and having an adjusting bowsie. The galvanised wire for the hooks takes the tension caused by the cord shrinkage better than brass wire. Shrouds were put on in pairs, the foremost starboard pair first. Four shrouds a side were fitted to each lower mast, two each side from the futtock shrouds to the topmast doublings and two backstays from the topgallant mast-heads, stayed by the spreaders, down to the main rail. The number of straps outside the bulwarks for the shrouds and backstays were copied from the painting of *Thermopylae*, mentioned before, but not all are used, for the sake of simplicity when rigging or unrigging the model. All the cordage was soaked in oil, accounting partly for the heavy appearance in the photographs . . . to retard the deleterious effect of sea salt on the fibres, especially where in contact with metal.

Chafing gear was applied wherever the foot of a sail touched a stay or the jibsheets crossed the forestay. Multi-coloured pipecleaners wrapped tightly round the cord served this purpose in appearance and fact, besides covering up more than one bowline knot that should have been a splice. The yards were linked together so that moving the crossjack moved all. Braces to lock the yards in position were from the main and main topsail yards, led through leads on the mizzen stay down to a block at the foot of the main mast, and back up to a bowsie on the main part. See Fig. 9. Slacking off the bowsie allowed the yards to be swung to a new angle whereas tightening it locked them all in position. The clews of the fore and main courses were secured by thin copper wire " clew spectacles " to an endless sheet round the ship, passed through blocks on the catheads and at the break of the poop. Sail was seldom carried on the crossjack of racing clippers and was accordingly omitted from the models' suit of sails. Sheets of brown paper were laid on the floor and on them were laid the masts with the yards in position, each sail being drawn on the paper to fit its space between the yards. This paper pattern allowed the general effect to be studied and compared with the painting in the China Clipper book. Each pattern was then cut out and drawn on to the sail material by laying a ruler along each edge of the paper. Extra width was also drawn parallel to the edges to allow for turning back as the hem. I did not hemstitch the 30 sails comprising

Thermopylae's complement, but used a judicious selection of fair words in a certain quarter, which must have been fair enough, as bolt ropes were sewn round every sail in addition. The cord sewn round the sails for bolt ropes was well stretched before being stitched in place. Incidentally, the painting mentioned shows the ship with single topgallants, but amongst the meagre details of the sail plan in existence double topgallants are specifically noted. These were undoubtedly fitted on the fore and main as shown in the photograph reproduced herewith.

Each square sail was sewn to its detachable jackstay. The spanker was laced to the gaff and jackstay up the mizzen mast, the clew hauled to the end of the boom with a small book. The upper square sail sheets were of thin fishing line attached to the clews with copper wire hooks round the bolt ropes. These sheets passed round copper wire hooks at each yardarm and were linked together with a small hook on the port sheet and a loop and bowsie on the starboard. This method enables the "nip to be freshened" whenever the set of the canvas needs it.

The jib and flying jib sheets, having been cut to fit were attached to small brass rings, port and starboard, from which a single endless cord took over, by means of which all could be hauled to windward when putting about. Thus four operations put *Thermopylae* on the opposite tack. First slacken the main brace bowsie, then swing all yards as one, thirdly tighten the main brace bowsie, fourthly haul the headsails to windward . . . the ship is now all aback and can be sailed on the other tack, the dinghy being kept to windward during the operation to form a lee. Correct trim should include a slight twist to each tier of yards so that the upper yards are braced less against the backstays than the lower yards, in the same manner that the gaff is more outboard than the boom of the spanker.

As rigged at present, the model *Thermopylae* is a compromise between the real thing and the requirements of a practical sailing model clipper with a crew of one. Clipper ships sailed close to windward, and the model has this characteristic to a marked degree ; so much so, that to keep her on a straight line when reaching, she requires careful balancing. Unless a touch of lee rudder is given with careful attention to her spanker sheet she tends to run up further and further, until, taken aback she stops, and then starts a stern board almost as fast as her normal forward mode of progression. Whenever possible, therefore, with rudder amidships, the flying jib is set on the fore royal stay and with her fore top and royal stunsails she sails on a straight line as long as the breeze holds true. In addition, the stunsails at the fore greatly improve the ship's running before the wind ; not the best sailing point for a square rigged model. After watching *Thermopylae* performing at sea I find it difficult to agree with those who advocate the fitting of an automatic steering gear on a square rigged model. As fitted to model yachts, this admirable device applies the helm according to the wind pressure thus holding the boat on her course. Should the vessel be taken aback, the elastic tension

The "Caliph" on the port tack

and running lines gybe her to the original tack. Should a square rigged model be taken aback, she stops, and then goes astern. It is difficult to see how an automatic rudder could be operated to obviate this . . . a square rigged ship cannot gybe.

Ponds surrounded by trees or other obstructions producing fluky winds are useless for square rigged models. The only suitable venue is, in my opinion, a stretch of water open to the wind on all sides, or the sea. If this is not available model sailing is more satisfactory with fore-and-aft rigged craft.

In conclusion, my model of *Thermopylae* was not built, rigged, or fitted as a show case model. She has many defects of which I am painfully aware, for, as is inevitable, time and opportunity since the war have taught me much of which I was ignorant at the beginning. She was built to sail in the sea, often in rough conditions, and to cope with, in her 1/48 scale self, full scale elements which show no particular consideration for her, or her often exhausted but enthusiastic owner. Building commenced before the war, and the work was progressing well when hostilities began. Shortly afterwards the builder found himself engaged in aerial journeyings of a nocturnal and belligerent nature, and so perforce thinking of other things.

During 1942 work on the ship was resumed, in the comparative calm of Flying Training Command, at various R.A.F. airfields in Wales and Scotland. With great difficulty, as wood was unobtainable, enough match boarding was obtained to make a travelling case, in which the ship was duly handed in and out of sundry Anson and Wellington aircraft, as an item of the owner's kit, when proceeding on the periodic postings. At odd times during the rest of the war the work proceeded whenever leisure and the exigencies of the service permitted. Progress was boosted for example, with the discovery of the before mentioned " discarded teak notice board."

After demobilisation, through Sir Roland Oliver's interest and his generous gifts of many rigging details and spars, the builder pressed on until the proud moment when *Thermopylae* was launched in the sea during the summer of 1947.

To the uninterested or uninitiated this long drawn out odyssey must seem odd . . a strange and most protracted pastime . . but surely all must agree, that as a counterpoise to *Atomic* thought, it has its points.

OBITUARY

Captain J. T. Shenton, R.N.

We regret to have to record the passing of one of our oldest ship-modellers, Captain J. T. Shenton, R.N., of Tourney Hall, Lydd, Kent. During recent years Captain Shenton lived with one or the other of his three sons, but he continued to build models. We met him over three years ago following the receipt of a photograph of one of his models sent us during the war by his eldest son. We were at once captivated by his lovable personality. In spite of his age—he was then in his 87th year—he was still building models, being at that time engaged on a model of the clipper *Torrens*, which he later completed. Captain Shenton served in the Royal Navy in the days when battleships were still fully rigged and thus had an intimate knowledge of sailing ships' rigging, which added considerably to the accuracy and consequent value of his models. His principal models were of a 74-gun ship of 1810, fully rigged with sails, a similar model but without sails, a 36-gun frigate, the 3-mast barque *Kenyon*, in which he served his apprenticeship, and the *Torrens*, as mentioned above, most of which have been illustrated in *The Model Engineer* and MODEL SHIPS AND POWER BOATS. These were all to the scale of $\frac{1}{8}$ in.-1 ft. He also built a number of model yachts and one of his principal recreations, even up to a year or two ago, was sailing full-size yachts. His models were shown in the 1948 and 1949 *Model Engineer* Exhibitions, and he applied for an entry form for this year's exhibition. His 74-gun ship model was awarded a bronze medal in 1948. Captain Shenton was a splendid example of the way in which a hobby keeps a man young and his mind alert and keen. He enjoyed good health to the very end and passed away quietly in his sleep.

Notes on Model Power Boats

by J. W. Tomlinson

How to Make Propellers and Hints on Fixing Silencers

BREAKING records with model power boats is not just a matter of putting the best engine in the best boat, as every enthusiast knows. It is the attention to details that counts, and to win a race means a lot of trial runs with " Gremlins " and all sorts of trouble knocking around. It is hard to say which detail matters most, but on looking round, the propeller can be said to count quite a lot when it comes to producing a winner.

I have seen the local enthusiasts down at the lake side changing their propellers and if a good run was made all eyes went to the prop. I actually saw one chap slip his rule across another fellow's propeller while it was still on the secret list. It is surprising to what lengths a chap will go to get a good propeller. But the length of the propeller is only one detail, there is width, shape, pitch and " spooning," all of which have to be right for speed and efficiency.

Most model makers use the method of trial and error to get these details right. This means that a good supply of propellers is needed, calling for a simple method of production. When the approximate length and blade width has been arrived at, by observation and a 6 in. rule (see above), a range of propellers should be produced having blades of various shapes and pitches. Each propeller should be stamped on the boss with a number so that it can be easily identified and its performance noted during the trial runs. The slightest alteration to blade shape, either by thinning down the leading edge, or a bit more " spooning " can mean the difference between winning or losing the race. Blade shaping cannot normally be done at the lake side, so this calls for a range of propellers as already mentioned.

The key to the situation is ease of production. With a suitable method, propellers can be produced cheaply and abundantly and with very little effort. One of the simplest methods is shown in Fig. 1. In this way half a dozen propellers of slightly different design can be made in a very short time. The boss is made from stock size mild steel rod, which is drilled down the centre with a small pilot hole of about $\frac{1}{16}$ in. diameter. For engines below 10 c.c., $\frac{5}{16}$ in. diameter rod is quite satisfactory, while $\frac{3}{8}$ in. diameter is suitable for 10 c.c. engines. These sizes will allow for a final tapping to take the driveshaft.

The length of the boss should be at least as much as the diameter, preferably a little more, and it should be slotted with a hacksaw to about a quarter of its length, as shown in the illustration.

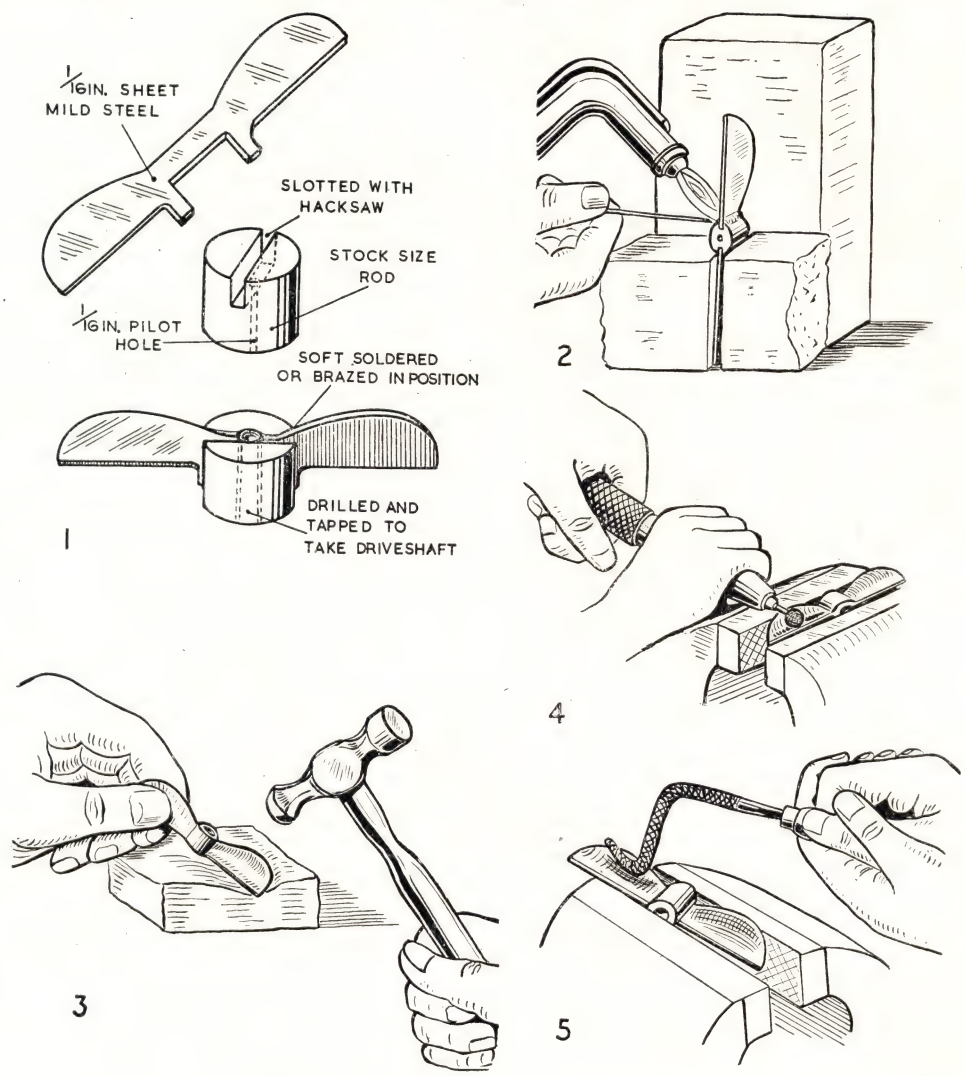
The propeller blades can be cut from $\frac{1}{16}$ in. sheet mild steel. The shape and size of the blades must be left to the builder's choice, as it is only by developing blades to suit the other design features of the boat that a super job is produced. As a guide, for a 10 c.c., the finished diameter of the propeller should be about $1\frac{3}{4}$ in. and approximately $\frac{1}{2}$ in. across the broadest portion of the blade. Before the blades are fixed in position, they should be twisted to give the required pitch.

Although soft soldering is strong enough for normal work, low temperature brazing is much better and will allow for any undue strain. When using low temperature strips such as " Esiflow," with the recommended flux, it is a simple matter to make a good job. The strip fuses at about 600 deg. C., and if the parts are clean, the metal will flow perfectly between the boss and the blades. Braze each side in turn as shown in Fig. 2, taking care not to fill in the pilot hole. After the blades have been fixed, drill out the pilot hole to the requisite tapping size. This method will ensure that the final tapped hole is central to the boss.

Spooning the blades can be carried out in three operations, and a little extra effort in this direction is well worth while. Fig. 3 shows the blades being beaten while cold ; this is quite easy when using $\frac{1}{16}$ in. mild steel. A ball peening hammer is suitable for the job holding the blades in turn on a lead block. The next operation, shown in Fig. 4, where a flexible driveshaft and rotary file are used, takes only a few minutes. If a motor-driven flexible drive is not available, the blades can be smoothed out with a bent round file as shown in Fig. 5. During the process of " spooning," the leading edges should be thinned down almost to a knife edge and all marks should be removed from both sides of the blades and surplus brazing metal from the boss. The third operation is the polishing. This is again easy if one possesses a flexible drive and a few emery bobs. Failing this, the blades can be polished with No. 1 emery cloth, finishing off with a piece of No. 0 dipped in paraffin oil.

Exhaust Pipes and Silencers

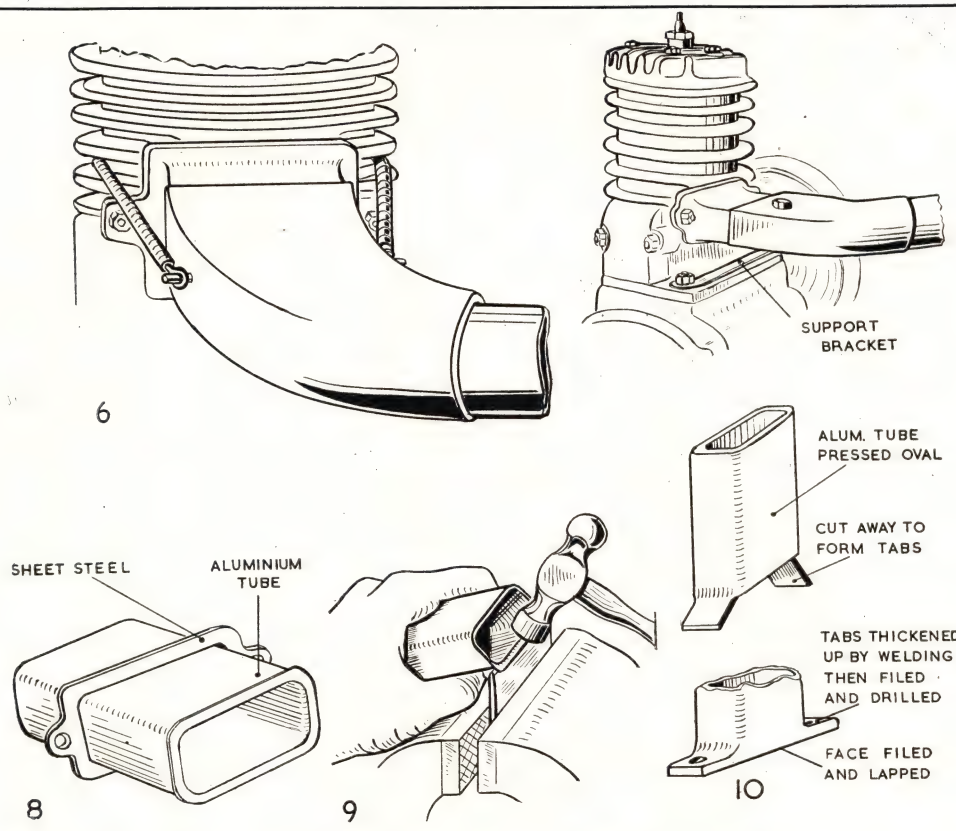
It is now almost essential that silencers be fitted to all engines of 10 c.c. and above. This has been brought about in the first place by local residents complaining about the noise. Perhaps they have some justification in making the complaint since quite a few events take place in residential areas. All the same, this is going to add to the troubles of the model maker if the job is not tackled in the right way. Owing to rather excessive vibration great care must be exercised in securing the pipe to the engine and the boat. Since the engine vibrations are far in excess of those set up in the boat, there must be some form of flexibility either in the exhaust pipe or in the way it is fixed. The same problem arises in automobile design and it would no doubt serve some purpose if the methods employed in this direction were studied.



1. *A simple method of making a propeller*
2. *Braze each side in turn using bricks for supporting and to conserve the heat*
3. *The blades are beaten hollow while cold using a block of lead and a ball peening hammer*
4. *A motor driven flexible drive shaft fitted with a ball rotary file is just the thing for "spooning out the blades"*
5. *If a flexible drive shaft is unavailable a bent round file can be used for "spooning" out the blades*

If the pipe is rigidly fastened to the engine and also to the boat, breakages will occur. The vibrations set up will cause either the cylinder studs to pull out or break off, the pipe flange to break and come adrift, or the bracket to break away from the boat. The motor engineer gets over the difficulty either by having a short piece of flexible pipe let into the exhaust pipe between its fixing on the engine and the chassis, or by having a rigid exhaust pipe secured to the chassis by rubber mounted brackets. Both these methods can be used with success on model power boats.

Another simple way of making flexible a joint is shown in Fig. 6. The exhaust stub is first bolted to the engine in the normal way, and a hole about $\frac{1}{8}$ in. diameter is drilled through the exhaust pipe approximately $\frac{3}{8}$ in. from the end to take a piece of wire (a cut-down nail will do). The wire is nicked with a file at each end and is left protruding about $\frac{1}{4}$ in. at each side of the exhaust pipe. A piece of spring cur-



6. *A piece of spring curtain wire is one way of making a flexible fixing. This is passed round the cylinder and hooked on to the exhaust pipe*
7. *If the exhaust pipe is fixed rigidly to the engine a support bracket should be fitted*
8. *An easy way of making exhaust stubs producing a light job with a strong flange*
9. *The lip for the flange is swaged over after the tube has been softened*
10. *This method of making an exhaust stub can be used when facilities for welding are available*

tain wire is then pulled round the cylinder and secured to the protruding wire with small hooks, thus making a flexible coupling to the engine.

If the exhaust pipe is rigidly fixed to the engine it is advisable to fit a support bracket from the pipe to a suitable nut on the engine, see Fig. 7. Another point of breakage is round the flange of the exhaust stub, this occurs chiefly with cast stubs made in aluminium. An easy way of making stubs and at the same time avoiding this trouble is shown in Fig. 10. A piece of round aluminium is pressed oval and annealed at one end over a soft flame. The softened end is then swaged out to form a lip, see Fig. 11. Next a steel flange is cut out of $\frac{1}{16}$ in. mild steel sheet and this is drilled to suit the cylinder studs fitted over the aluminium tube.

An all-aluminium stub can be made from a single piece of tube providing facilities are available for welding. This method is shown in Fig. 12. The end of the tube is cut to form two tabs, these are bent either in or out to suit the cylinder facing. Additional metal is added to the tabs by welding to give them the extra strength needed. The tabs are then filed to shape and drilled.

MODEL MARINE POWER PLANTS

(*Continued from page* 143)

range of control on the throttle. It is possible to dispense with the use of a high-tension distributor in the ignition system of this engine, by employing a dual-spark coil, as for the " Craftsman Twin," controlled by a single contact breaker of normal type.

While no attempt is made to give detailed instructions on the construction of engines described in these articles, readers are reminded that they have all been fully dealt with in *The Model Engineer*, and in nearly all cases fully detailed blueprints are available, except that the " Seagull " engine is the subject of articles now running fortnightly in the above journal, and blueprints, therefore, are not yet ready. (*To be continued*)

SHIPS IN THE NEWS

by Laurence Dunn

SPENSER

Not for many years has the Lamport & Holt Line owned a ship with such a varied career as their latest purchase, a 5,023-ton motorship which they have just renamed *Spenser*,

She was built as the *Dusseldorf* in 1935, by the Bremer Vulkan yard as one of a trio designed for the Norddeutscher Lloyd-Hamburg American joint service to the West Coast of South America.

Dusseldorf and her Maier hulled consort *Osnabruck* were owned by the N.D.L., but the third, the *Hermonthis* wore H.A.L. colours. All three were single screw diesel driven craft of 14½ knots speed and although they could lift 6,800 tons of cargo they also had accommodation for 20 first class passengers.

After sheltering in Valparaiso for the first few months of the war, the *Dusseldorf* attempted to slip home to Germany, but was intercepted and captured before any attempt at scuttling could be made.

Next when the Ministry of War Transport took her over they renamed her *Poland*, but later, in 1940, when the "Empire" system of nomenclature had been introduced, this was changed to *Empire Confidence*.

As such she operated under the management of Royal Mail Lines until 1946, when she was bought by the Alexandria Navigation Co., and renamed *Star of El Nil*. For the next two years they used her on their Liverpool-Egypt Service, but with the advent of the newly built *Star of Assuan*, in 1948, she was laid up and put on the sale list.

* * *

SOLITAIRE

The *Solitaire*, one of the first diesel engined tankers ever to be built has just been sold for scrap to the British Iron and Steel Corporation.

She is a comparatively small ship of only 3,160 tons and 315 ft. in length, and was built in the U.S.A. by the Texas S.S. Co., of Bath, Maine, for the oil company of that name.

Her engines too have had a long life, for she still retails her original twin McIntosh and Seymour motors.

In the 'thirties she was transferred to a subsidiary firm, the Texas Co. (Norway) A/S, of Oslo, and her new owners gave her a very thorough refit. Seldom has a ship's appearance benefited so much from "face lifting." Built as a conventional three islander with single knuckle counter stern and machinery aft, she had two exceptionally tall masts near the centres of each well. These were shortened and the old and very thin insignificant funnel aft was replaced by a taller and much stouter one.

The black hull and drab dark superstructure were painted white and for the last few years of her life she looked a really handsome ship and a credit to her Norwegian flag, although her performance probably lagged far behind that of newer rivals.

JEF DE SMEDT

In 1946 The British and Continental S.S. Co. Ltd., of Liverpool, took delivery of three new ships, 12-knotters, with a gross tonnage of just over 2,000, and an overall length of 308 ft.

The *Lestris* was built by Hall Russell's, of Aberdeen, while her sister ships *Kittiwake* and *Merganser* hailed from the Burntisland shipyards.

Just over three years ago—on April 28th, 1947, to be exact, the *Merganser*, then only a few months old, was proceeding up the Scheldt when she was in collision with the American owned *Norwalk Victory*. The *Merganser* got the worst of it and sank. Declared a constructive total loss, the underwriters sold her wreck to local Antwerp buyers.

These later succeeded in raising her and now after extensive repairs she has just re-entered service as the *Jef de Smedt*, a very useful addition to the Belgian merchant fleet.

* * *

EX-ENEMY SHIPS

At present there is no up-to-date register of German owned ships. To help meet this need a list of all vessels of over 1,000 tons gross has been compiled by the Swedish Consulate at Hamburg. It names 66 vessels totalling over 160,000 tons. Of these 33 are over 1,500 tons and only 16 over 3,000 tons. The largest are the motor tankers, *Elisabeth Entz*, 9,860 tons gross and the *Pan Europe*, 9,520 tons, which was brought last year from Mr. Leif Hoegh, of Oslo. By the time this is in print, however, the number of ships will have risen as a number of further purchases have and are being made.

Probably the most important addition to the German merchant fleet is the *Nijmegen*, a five-year old steamer of 6,345 tons which has just been bought back by the Hansa Line from Holland. Built as the *Greifenfels*, at Amsterdam, during the German occupation, this ship was originally ordered by the Hansa Company. However, after the war she was allocated to the Dutch Government who renamed her *Nijmegen*. Apparently she did not completely suit their needs, otherwise it is difficult to explain her sale. She is a three-deck ship, 446.6 ft. long by 60.0 ft. broad and 26.0 ft. deep, and is propelled by a four cylinder compound engine.

While on the subject of ex-enemy ships, reports from Japan say that several of the biggest ship-owning companies there have changed their names. The largest firm, the Nippon Yusen Kaisha is now known as the Nihon Kisen Kaisha, while its rival, the Osaka Shosen Kaisha, has been rechristened the Kokusai Kisen Kaisha, the Mitsui Line has become the Fuki Kisen Kaisha and the Yamashita Company now trades as the Taiheiyo Kisen Kaisha.

FOR THE BOOKSHELF

BUILD YOURSELF A MODEL YACHT

By W. J. Daniels and H. B. Tucker

Percival Marshall & Co. Ltd., London. 12*s.* 6*d. net.* 9 *in.* × 6 *in.*, 84 *pages and* 4 *folding plates in pocket in cover.*

We have waited a long time for this book which is a revised and enlarged version of the book *Build Your Boy a Model Yacht* by the same authors and which was so popular before the war. It contains up-to-date designs and detailed building instructions for a 30 in. sharpie and a 36 in. Restricted Class racing yacht. The sharpie is built of $\frac{1}{16}$ in. three-ply on frames and, in addition to the fact that the material is reasonably easy to obtain, this type of hull is probably the easiest of any to build and thus makes an ideal boat for the beginner. The 36 in. yacht, which is built on the bread-and-butter principle, and makes a first-class yacht, could take its place in any company and would hold its own in any regatta. The plans are drawn full size so that all necessary outlines can be traced directly on to the wood. These alone are worth the price asked for the book. Details of rigging and sail plan are included. The authors need no introduction to model yachtsmen. Mr. Daniels is world famous as a designer of model yachts and has probably won more races with his yachts than any other designer. Mr. Tucker has designed many original and successful model yachts and in addition to being chairman of the M.Y.A. from 1928 to 1929 was editor of *Marine Models* from 1929 up to the outbreak of the war.

A SHIP MODELLER'S LOG BOOK

By John N. C. Lewis

Percival Marshall & Co. Ltd., London. 12*s.* 6*d. net.* $7\frac{1}{2}$ *in.* × 5 *in.*, 200 *pages.*

Apart from its general interest for ship modellers this book is an ideal introduction to the subject for the beginner. It deals entirely with sailing ships and almost all the basic types are included. After a very readable introduction we have a series of 22 small outline drawings illustrating different types followed by instructions for building the following ships :— a Stuart royal yacht, a Tudor warship, H.M.S. *Victory*, clipper ships in bottles, an Arab baggala in a sea setting, a revenue cutter, a collier brig, a sailing model of the schooner *Bluenose*. There is also a valuable chapter on building planked hulls. Scale drawings of the lines of each type are given. These have been obtained from the best sources and are, in every case, to be relied on. A number of photographs of models and of actual ships are included. This book will have a wide appeal in spite of its somewhat small page size, and is one of the most attractive and interesting books on ship modelling we have seen.

Editor's Correspondence

Dear Sir :

I wonder if any reader can tell me how smoke can be produced. I am building a coastal " tramp," scale $\frac{1}{8}$ in. and electrically propelled, to please an eight-year-old son, and I need a substance of some kind that will smoulder in the smoke stack and give off a fairly dense black smoke. The inside dimensions of the funnel are $3\frac{3}{4}$ in. long × $\frac{3}{4}$ in. diameter. The block of whatever-it-is would lie on a platform of brass gauze, at the base of the funnel would be several 1/32 in. or 1-mm. holes, which will, I think, cause enough draught to keep the stuff smouldering.

I have tried charcoal fed with pencil shavings (almost a powder, from a machine pencil sharpener) but this method needs constant feeding every 60 seconds or so !

A block of charcoal about $\frac{5}{8}$ in. square impregnated with something should smoulder for at least ten minutes, which is all that is wanted. Perhaps one of our readers who has dabbled in " stinks " can put me wise.

Yours faithfully,

Battersea Park, S.W.11. J. Siretт.

There are various methods of producing smoke, one of the easiest, perhaps, being to soak a sheet of blotting-paper in saltpetre, roll it into cigarette form and insert in a funnel. On igniting it, it will burn for quite a considerable time.

Another method is to soak cotton wool in liquid ammonia and allow drops of hydrochloric acid to fall on it when it will give off a dense vapour or smoke. The ammonia neutralises the acid so that the structure of the model is not affected.

For use in test tunnels the usual practice is to place a quantity of titanium tetrachloride in a suitable container and to arrange a draught to carry the resultant smoke or vapour to wherever it is required.

Dear Sir :

I have recently built a 48-in. hard chine power boat from plans supplied by *The Model Engineer* Plan Service and I should like your advice on the following items.

I wish to install radio control and in my opinion electric drive should be fitted to obtain the best results from a radio-controlled boat.

In your opinion is a boat of this size a practical proposition for electric drive, if so, what type and size of motor or motors would you suggest, and what size propellers.

I propose to fit twin propellers and also twin rudders. Any other suggestions with regard to the power drive of this type of boat other than electric (bearing in mind the form of control, i.e. radio-control) would be very much appreciated.

As radio-controlled boats seem to be the modern trend, would it not be possible to have some more detailed and constructive articles in *The Model Engineer* for the layman ? These articles, I am sure,

Radio Control for Model Yachts

The Radio Controlled Models Society made history on August Bank Holiday week-end when they held a regatta at Fleetwood and operated model sailing yachts under radio control for what we believe

The A Class model rounding the marking buoy

was the first time. The regatta was sponsored by the *Daily Dispatch* and was supported by the Northern Association of Model Engineers and the Fleetwood Model Yacht Club. The application of radio control to model yachting is still in its infancy and the entries in this particular section were confined to two yachts—an "A" Class yacht entered by Mr. G. Honnest-Redlich and a cutter entered by Mr. J. C. Hogg, until recently the secretary of the Radio Controlled Models Society. The yachts were controlled by one relay (I hope my technical terms are correct) which is connected by a rod to the tiller and a second relay which controls the sheets. The wind was light and fairly true and the yachts behaved perfectly. Each was required to go around a prearranged course which was indicated by suitably placed buoys. It was almost uncanny to see how the yachts wound their way around the buoys, answering the rudder as though a helmsman were aboard, with the sheets being eased out or hardened in to suit the various points of sailing. The cutter, being a smallish model, was easily controlled but the "A" Class model with its greater speed required a little more room. Mr. Honnest-Redlich, who sailed it, was assisted by the two brothers Watson, who are well known in model yachting circles, both in Fleetwood and elsewhere. In discussion with the writer, Mr. Honnest-Redlich said that sailing yachts was the most fascinating application of radio control he had so far experienced and that the knowledge of how to sail the yacht was of vastly greater importance than the understanding of the radio apparatus.

In certain circles there is a feeling that radio control will spoil model yachting. In our opinion nothing could be farther from the truth. Admittedly, radio control dispenses with the automatic steering gear and will thus discount the knowledge and experience of the use of Braine and vane gears, but it places the emphasis where it should be, viz., on skill in using the wind or in setting the sails to take advantage of every little variation in its force and direction. This is the test of the man who sails full-size yachts and we feel that the use of radio control will make model yachting more like full-size yachting and also that it will greatly increase the yachtsman's interest in model yachts. It appears that to race a number of yachts on one wavelength, each yacht can be tuned to a different note and that in this way each one can be controlled independently of the others. This being so, model yachts can be raced against each other as with full-size yachts, manoeuvring to cross the starting line with the gun and then to secure the most favourable position and course for winning the race. It will be interesting to see how this phase of model yachting develops.

Editor's Correspondence (*Continued from page* 157)

would be very acceptable to a large number of readers.

Yours faithfully,

Cheadle, Cheshire. R. SMITH.

We do not consider the 48-in. hard chine displacement launch a suitable type for electric drive. To drive a boat of that size you would require one or two fairly powerful motors, and the batteries for these would be too heavy for this type of craft, which calls for a high power/weight ratio.

There is no special difficulty about fitting radio control to a boat driven by i.c. engines, and we have a number of successful examples of this combination.

Your feeling that we should have more articles on radio control in "The Model Engineer" and MODEL SHIPS AND POWER BOATS *is shared by a number of people, and we hope to be in a position to publish something in the near future.*

News from the Clubs

THE M.P.B.A. GRAND REGATTA

As usual, this popular event was held on the day following the end of *The Model Engineer* Exhibition, and the number of boats entered, which were of every type of prototype imaginable, broke all records of previous "Grands." The first event was the nomination race, in which W. Beard's *W.L.*4 (W. London) returned a correct nomination, with W. Allan's *Elsie* (W. London) 1.3 per cent. error and A. Evans's *Maycock* (Victoria) 1.4 per cent. error. Thirteen boats entered for the "C restricted race, with M. Poyser's *Rumpus II* (Victoria) 42.3 m.p.h., N. Ridley's *Marie* (S. London) 35.5 m.p.h., and C. Stanworth's *Meteor IV* (Bournville) 33.5 m.p.h. The Class "B" event for the Mears Trophy resulted in G. Lines's *Sparky II* (Orpington) with 53.3 m.p.h., R. Mitchell's *Beta II* (Runcorn) 46.0 m.p.h., and J. Dalziel's *Naiad II* (Bournville) 36.5 m.p.h. J. Curtis's *Micky* (Victoria) won the steering competition for the M.P.B.A. Trophy with 11 points, M. Irving's *Joan* (Tynemouth) 9 + 3 points, and B. Whiting's *Eileen* (Orpington) 9 + 0 points. The "M.E." Prototype Cup was won by R. Brown (Victoria) with his *S.A. Everard*. Class C race for the Victory Cup was won by R. Phillips's *Foz* (S. Lond.), 43 m.p.h., R. Mitchell's *Gamma* (Runcorn) second with 42.3 m.p.h., and L. Barnes's *Dagwood* (Derby) 31 m.p.h. Class "A" race for Speed Championship Trophy was won by K. Williams's *Faro* (Bournville) 52.7 m.p.h., A. Cockman's *Ifit* 7 (Victoria) second with 52.5 m.p.h., and J. Innocent's *Betty* (Victoria) third with 51.3 m.p.h. The Crebbin Trophy for flash steamers was won by A. Cockman's *Ifit* 7, 52.5 m.p.h.

INTERNATIONAL RADIO CONTROLLED MODELS SOCIETY

Important meetings are being arranged during October for the Manchester, Tyneside, Birmingham and London Groups of thix society. Full particulars of these meetings can be obtained from the hon. secretary, T. F. Sutton, The Lodge, Manchester Grammar School, Manchester, 13.

THAMES SHIPLOVERS & SHIP MODEL SOCIETY

On October 12th, Mr. Edward Bowness, Lt.-Cdr. J. H. Craine, and others will discuss the ship models at this year's *Model Engineer* Exhibition.

On October 26th, Mr. G. R. Worcester will give a lecture on "Chinese Junks." Mr. Worcester has spent 35 years with the Chinese Maritime Customs and is the acknowledged authority on the subject. With his lightning sketches and his humorous comments Mr. Worcester's lectures are of more than usual interest.

THE TYNESIDE SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS

The annual exhibition held by this society will be at the Chronicle Hall, Pudding Chare, Newcastle-on-Tyne, from Monday, October 16th-28th inclusive. A large display of models of all kinds will be on view, including cars, ships and locomotives. A feature of the exhibition will be demonstrations of models working under radio control. Any further information can be obtained from the Exhibition Manager, F. Reynolds, Esq., 25, The Crescent, Benton, Newcastle-on-Tyne.

N.B.—Several interesting club reports have been held over owing to pressure on space.

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Notices

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All correspondence relating to sales of the paper should be addressed to THE SALES MANAGER and correspondence relating to display advertisements to THE ADVERTISEMENT MANAGER.

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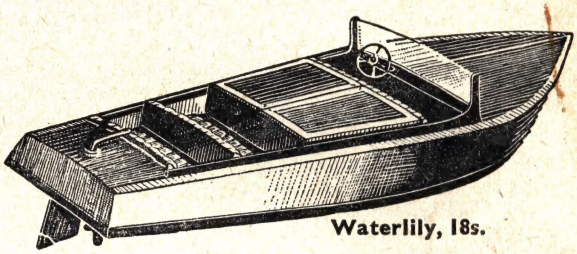

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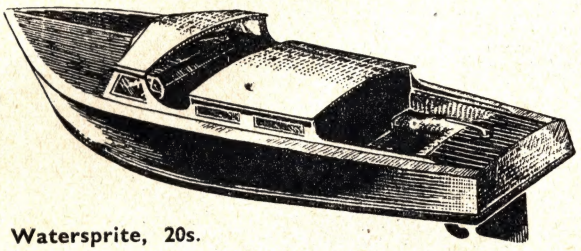

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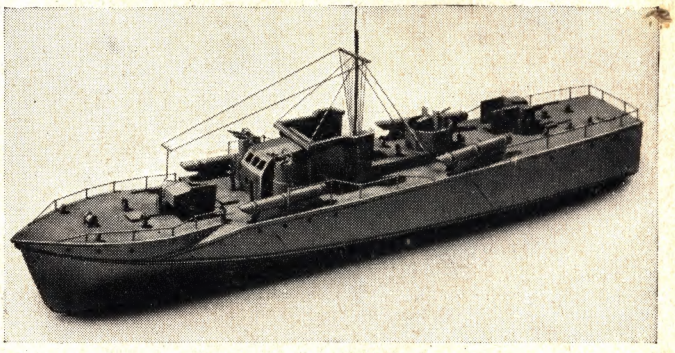

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